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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/814,803      | 04/01/2004  | Kazuo Tada           | 01-627              | 5304             |

23400 7590 03/16/2007

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| EXAMINER |
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NORRIS, JEREMY C

|          |              |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2841

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 03/16/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/814,803

Applicant(s)

TADA ET AL.

Examiner

Jeremy C. Norris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-13 is/are allowed.
- 6) ☒ Claim(s) 1 and 4-6 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US 2002/0189859 A1 (Shiraishi)

Shiraishi discloses, referring primarily to figure 2, a multi-layer printed circuit board comprising: a resin substrate including a plurality of laminated thermoplastic resin films (23, [0038]); a thin film resistor (33) embedded in the resin substrate; and an electrode (51) disposed on the thin film resistor, wherein the thermoplastic resin film includes a conductive pattern (pattern 22 directly above and to the left of resistor 33 as seen in figures 1F-H) made of metallic film ([0038]) and wherein the conductive pattern is disposed over or under the electrode, the conductive pattern is disposed nearer to the electrode than any other conductive pattern over or under the electrode, and the conductive pattern covers all of a periphery of the electrode (figure 2) [claim 1], wherein the resin substrate includes a plurality of thermoplastic resin films (23) laminated and bonded together [claim 6].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirashi in view of US 2002/0195420 A1 (Obert).

Shirashi discloses the claimed invention as described above except Shirashi does not specifically state that the thin film resistor has a thickness equal to or thinner than  $10\text{ }\mu\text{m}$  [claim 4] nor that the thin film resistor has the thickness equal to or thinner than  $1\text{ }\mu\text{m}$  [claim 5]. However, it is well known in the art to form thin film resistors with a thickness less than  $1\text{ }\mu\text{m}$  as evidenced by Obert ([0044]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to form the thickness of the thin film resistor in the invention of Shirashi to be less than  $1\text{ }\mu\text{m}$  as is known in the art and evidenced by Obert. The motivation for doing so would have been to provide the desired amount of resistance.

***Allowable Subject Matter***

Claims 8-13 are allowed.

Claims 2, 3, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 2 states the limitation "wherein all of a periphery of the thin film resistor is covered with the conductive pattern disposed over or under the resistor". This limitation, in conjunction with the other claimed features, was neither found to be disclosed in, nor suggested by, the prior art. Claim 3 states the limitation "wherein the thin film resistor is covered with the conductive pattern disposed on a side opposite to the electrode across the thin film resistor". This limitation, in conjunction with the other

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claimed features, was neither found to be disclosed in, nor suggested by, the prior art.

Claim 7 states the limitation "wherein the conductive pattern prevents a fluidized thermoplastic resin from moving toward the thin film resistor when a thermoplastic resin composing the thermoplastic resin film is fluidized". This limitation, in conjunction with the other claimed features, was neither found to be disclosed in, nor suggested by, the prior art. Claim 8 states the limitation "wherein all of a periphery of the thin film resistor is covered with the conductive pattern". This limitation, in conjunction with the other claimed features, was neither found to be disclosed in, nor suggested by, the prior art.

### ***Response to Arguments***

Applicant's arguments filed 13 November 2006 have been fully considered but they are not persuasive. Specifically, Applicant argues, "Shirashi fails to teach or suggests (sic), for example, 'an electrode disposed on the thin film resistor.'...To the contrary, in Shirashi, the thin film resistor (33) is disposed between two electrodes (32)". However, the Examiner notes that Applicant is referring to the embodiment disclosed with respect to figures 1A-H, whereas the instant rejection refers to the embodiment of figure 2, in which the electrode (51) is indeed formed on the thin film resistor. Additionally, Applicant alleges that in Shirashi "the nearest conductive pattern (22) disposed over or under the electrode (32) covers only one end of the electrode (32)". However, once again, Applicant is referring to the embodiment of figures 1A-H, whereas the instant rejection is drawn from the disclosure of figure 2, where indeed the

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conductive pattern (22) covers the entire periphery of the electrode (51). Thus, Applicant's traversal of the instant rejections on these grounds is deemed unsuccessful.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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